CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/MRG/W.No.14/CSR-01/243/CEMENT/2016-17 Date: 13.01.2017

TEST REPORT ON CEMENT

*** Customer**	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. M.R. Girish,** Gowda #48/3, 6th Cross, Srinivasanagara, Vishwaneedam (Po), Sunkadakatte, Bangalore – 560 091.
*** Name of Work**	:	Improvements to roads and drains at 10th cross and other cross roads at Manjunathanagara Ward No.14, Bagalagunte, BBMP, Bangalore.
*** Reference**	:	BBMP/DZ/AEE/TDSD/PR/600/2/2016-17 Dated: 10.01.2017
*** Sample ID**	:	Cement
Sample Received on	:	11.01.2017
Period of Testing	:	11.01.2017 to 13.01.2017

The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988 (RA-2014)	29.50 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988 (RA-2014)	135 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988 (RA-2014)	485 Minutes	Not More than 600 Minutes
3	Soundness by Le Chartlier Method	IS-4031 (Part-3) 1988 (RA-2014)	1 mm	Not more than 10mm

*Information is furnished by the Customer/Representative.

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VIDYARANI P.K.
Technical Manager

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ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
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Job No.: CTCE/BBMP/MRG/W.No.14/CSR-01/243/SAND-Gradation/2016-17 13.01.2017

TEST REPORT ON SIEVE ANALYSIS OF FINE AGGREGATES

*** Customer**	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. M.R. Girish,** Gowda #48/3, 6th Cross, Srinivasanagara, Vishwaneedam (Po), Sunkadakatte, Bangalore – 560 091.
*** Name of Work**	:	Improvements to roads and drains at 10th cross and other cross roads at Manjunathanagara Ward No.14, Bagalagunte, BBMP, Bangalore.
*** Reference**	:	BBMP/DZ/AEE/TDSD/PR/600/2/2016-17 Dated: 10.01.2017
*** Sample ID**	:	Fine Aggregates
Technical Reference	:	IS : 2386 (Part 1) - 1963 (RA-2011)
Sample Received On	:	11.01.2017
Date of Testing	:	13.01.2017

Total Wt. of Aggregates in gms = **1000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2011)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	95.30	90-100	90-100	90-100	95-100
2.36	76.80	60-95	75-100	85-100	95-100
1.18	56.50	30-70	55-90	75-100	90-100
600 Micron	30.90	15-34	35-59	60-79	80-100
300 Micron	11.40	5-20	8-30	12-40	15-50
150 Micron	5.60	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative

Remarks : This sample is under Zone-I specific limits.

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Job No.: CTCE/BBMP/MRG/W.No.14/CSR-01/243/AGG/GR/2016-17 13.01.2017

TEST REPORT ON SIEVE ANALYSIS OF COARSE AGGREGATES

*** Customer**	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. M.R. Girish,** Gowda #48/3, 6th Cross, Srinivasanagara, Vishwaneedam (Po), Sunkadakatte, Bangalore – 560 091.
*** Name of Work**	:	Improvements to roads and drains at 10th cross and other cross roads at Manjunathanagara Ward No.14, Bagalagunte, BBMP, Bangalore.
*** Reference**	:	BBMP/DZ/AEE/TDSD/PR/600/2/2016-17 Dated: 10.01.2017
*** Sample ID**	:	Coarse Aggregates (40mm)
Technical Reference	:	IS : 2386 (Part 1) -1963 (RA-2011)
Sample Received on	:	11.01.2017
Date of Testing	:	13.01.2017

Total Wt. of Aggregates in gms= **5000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2011)	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	97.60	95-100	85-100
20	32.60	30-70	0-20
10	13.00	10-35	0-5
4.75	3.20	0-5	-

* Information is furnished by the Customer/Representative

Remarks : This sample is under graded specific limits.

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Job No.: CTCE/BBMP/MRG/W.No.14/CSR-01/243/Cube/2016-17 27.02.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer**	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. M.R. Girish** Gowda #48/3, 6th Cross, Srinivasanagara, Vishwaneedam (Po), Sunkadakatte, Bangalore – 560 091.
*** Name of the work**	:	Improvements to roads and drains at 10th cross and other cross roads at Manjunathanagara Ward No.14, Bagalagunte, BBMP, Bangalore.
*** Reference**	:	BBMP/DZ/AEE/TDSD/PR/600/2/2016-17 Dated: 10.01.2017
*** Sample ID**	:	Cement Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
*** Grade of Concrete**	:	M_{15}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	27.02.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	30.01.2017	27.02.2017	8.126	351.6	15.63
2	30.01.2017	27.02.2017	8.275	367.2	16.32
3	30.01.2017	27.02.2017	8.392	378.9	16.84

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Job No.: CTCE/BBMP/MRG/W.No.14/CSR-01/243/CC Solid Block/2016-17 18.01.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF SOLID CONCRETE BLOCKS

*** Customer**	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. M.R. Girish,** Gowda #48/3, 6th Cross, Srinivasanagara, Vishwaneedam (Po), Sunkadakatte, Bangalore – 560 091.
*** Name of Work**	:	Improvements to roads and drains at 10th cross and other cross roads at Manjunathanagara Ward No.14, Bagalagunte, BBMP, Bangalore.
*** Reference**	:	BBMP/DZ/AEE/TDSD/PR/600/2/2016-17 Dated: 10.01.2017
Technical Reference	:	IS: 2185 (Part-1) - 2005 (RA-2010)
Size of Blocks	:	400mm x 200mm x 200mm
Cross Sectional Area	:	80000 mm^2
No. of Blocks Tested	:	08
Sample Received on	:	13.01.2017
Date of Testing	:	18.01.2017

Sl.No.	Block ID	Wt. in Kg	Failure load (KN)	Compressive strength (N/mm^2)	Requirement as per IS: 2185 (Part-1) - 2005 (RA-2010)
1	Block 1	36.53	261.5	3.27	Minimum required Compressive Strength of Individual Units 3.20 N/mm^2
2	Block 2	34.78	263.5	3.29	
3	Block 3	35.63	259.4	3.24	
4	Block 4	35.23	260.3	3.25	
5	Block 5	36.48	261.5	3.27	
6	Block 6	34.72	260.3	3.25	
7	Block 7	35.23	259.8	3.25	
8	Block 8	36.58	261.2	3.27	

*Information is furnished by the Customer/Representative.

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Job No.: CTCE/BBMP/MRG/W.No.14/CSR-01/243/Pre Slab/2016-17 31.01.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CORE

*** Customer**	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. M.R. Girish,** Gowda #48/3, 6th Cross, Srinivasanagara, Vishwaneedam (Po), Sunkadakatte, Bangalore – 560 091.
*** Name of work**	:	Improvements to roads and drains at 10th cross and other cross roads at Manjunathanagara Ward No.14, Bagalagunte, BBMP, Bangalore.
*** Reference**	:	BBMP/DZ/AEE/TDSD/PR/600/2/2016-17 Dated: 10.01.2017
*** Sample ID**	:	Precast Slab
*** Grade of Concrete**	:	M_{20}
Techinical Reference	:	IS:516-1959 (RA- 2013), SP-24:1983.
Sample Received on	:	27.01.2017
Date of Testing	:	31.01.2017

Sl. No	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	81.00	0.401	2521.33	1.62	0.959	29.60	15.08	16.28	16.98	21.22
2	50.00	80.00	0.398	2533.75	1.60	0.957	32.65	16.63	17.96	17.18	21.48
3	50.00	82.00	0.416	2583.74	1.64	0.961	34.30	17.47	18.87	18.13	22.67

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Job No.: CTCE/BBMP/MRG/W.No.14/GSB-I/GR/2016-17 Date 08.02.2017

TEST REPORT ON GRADATION FOR COARSE GRADED GARNULAR SUB BASE

* Customer	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. M.R. Girish,** Gowda #48/3, 6th Cross, Srinivasanagara, Vishwaneedam (Po), Sunkadakatte, Bangalore – 560 091.
* Name of work	:	Improvements to roads and drains at 10th cross and other cross roads at Manjunathanagara Ward No.14, Bagalagunte, BBMP, Bangalore.
* Reference	:	BBMP/DZ/AEE/TDSD/PR/600/2/2016-17 Dated: 10.01.2017
* Sample ID	:	Coarse Graded-I
Technical Reference	:	IS : 2720 (Part - 4) 1985 (RA-2010), MORTH Table : 400-2
Date of Testing	:	08.02.2017

Oven Dry Wt (gm) : 5000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits
75	0	0	0	100	100
26.5	1315	1315	26.30	73.70	55-75
4.75	2325	3640	72.80	27.20	10-30
0.075	1240	4880	97.60	2.40	<10
PAN	120				
Total	5000				

* Information is furnished by the Customer/Representative

Remarks: Satisfies MORTH Specifications as per Table 400-2, Grading I

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Job No.: CTCE/BBMP/MRG/W.No.14/GSB-1/AL/2016-17 Date 08.02.2017

TEST REPORT ON ATTERBERG LIMITS FOR GRANULAR SUB BASE

*** Customer**	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. M.R. Girish,** Gowda #48/3, 6th Cross, Srinivasanagara, Vishwaneedam (Po), Sunkadakatte, Bangalore – 560 091.
*** Name of work**	:	Improvements to roads and drains at 10th cross and other cross roads at Manjunathanagara Ward No.14, Bagalagunte, BBMP, Bangalore.
*** Reference**	:	BBMP/DZ/AEE/TDSD/PR/600/2/2016-17 Dated: 10.01.2017
*** Sample ID**	:	GSB- (Coarse graded-I)
Technical Reference	:	IS : 2720 (Part - 5) 1985 (RA-2010), MORTH Table : 400-01
Date of Testing	:	08.02.2017

Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit, %	21.65	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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